

Open Burning at Holston AAP and Other Actions Regarding Energetic Waste

BRIEFING FOR OLEM IO AND REGION 4 ADMINISTRATOR

DECEMBER 2021

Meeting Objectives

1. Communicate concerns regarding open burning at Holston Army Ammunition Plant (HAAP) in Kingsport, TN.
2. Describe short- and long-term actions to address HAAP and other open burning and open detonation (OB/OD) facilities.
3. Request senior leader support and feedback.

Agenda

- Background on OB/OD
- Open Burning at Holston AAP
- Other Actions Regarding OB/OD



Brief Background on OB/OD

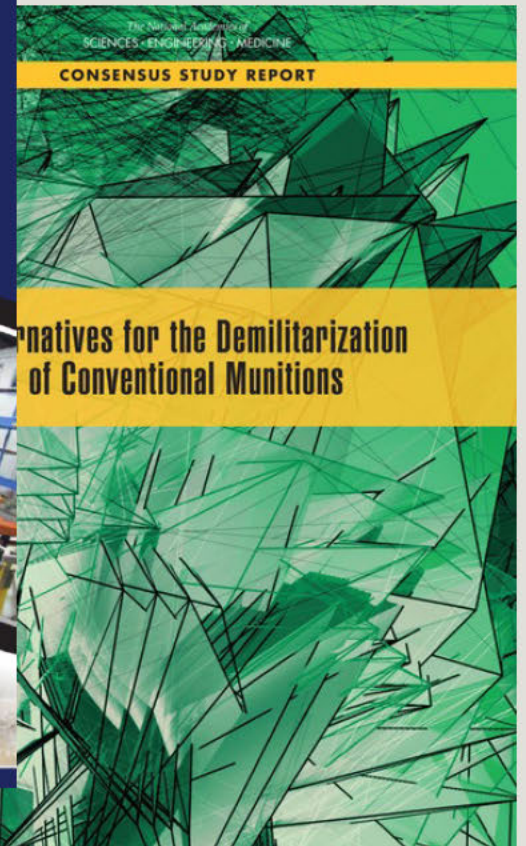
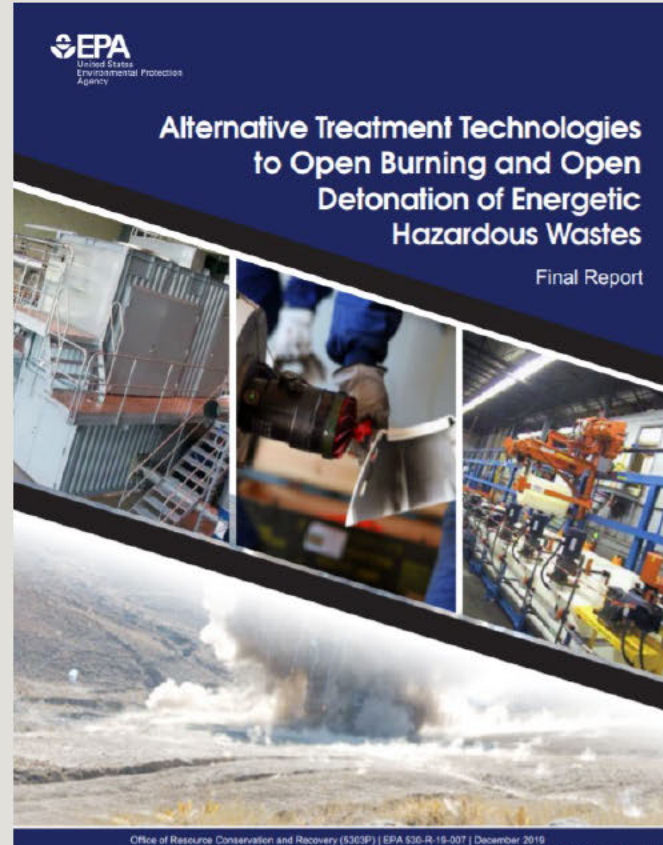
- In 1978, EPA proposed to ban all open burning of hazardous waste.
- Comments on the 1978 proposal, from DoD and other stakeholders, stated there were no safe alternatives for treating explosive hazardous waste.
- In 1980, EPA's final rule allowed the open burning/open detonation (OB/OD) of waste explosives **“which cannot safely be disposed of through other modes of treatment”** (40 CFR 265.382).

Brief Background on OB/OD

- Waste explosives include waste that has the potential to detonate and bulk military propellants.
- This includes military ammunition and explosives (e.g., RDX, HMX, IMX, TNT), rocket propellant, fireworks, flares, and auto airbag explosives.
- Waste explosives, when OB/OD'd, have the potential to release to the environment heavy metals, explosives, perchlorate, particulates, dioxins, per- and polyfluoroalkyl substances (PFAS) and other toxic pollutants.

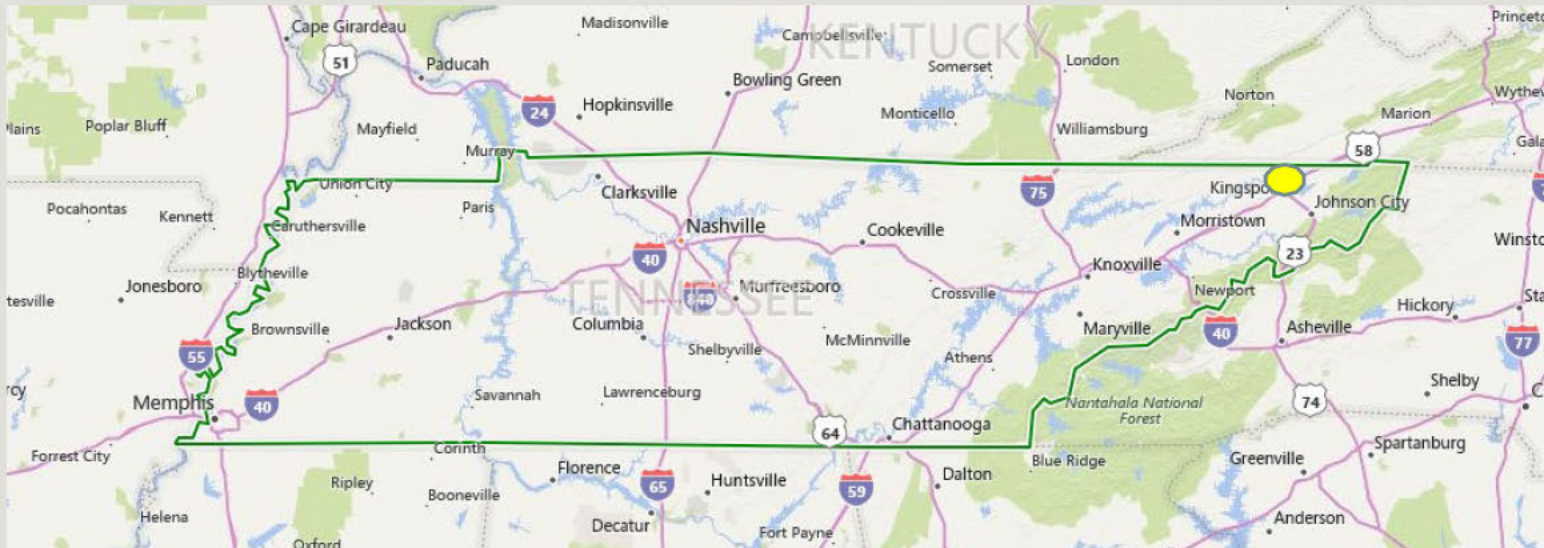
Brief Background on OB/OD

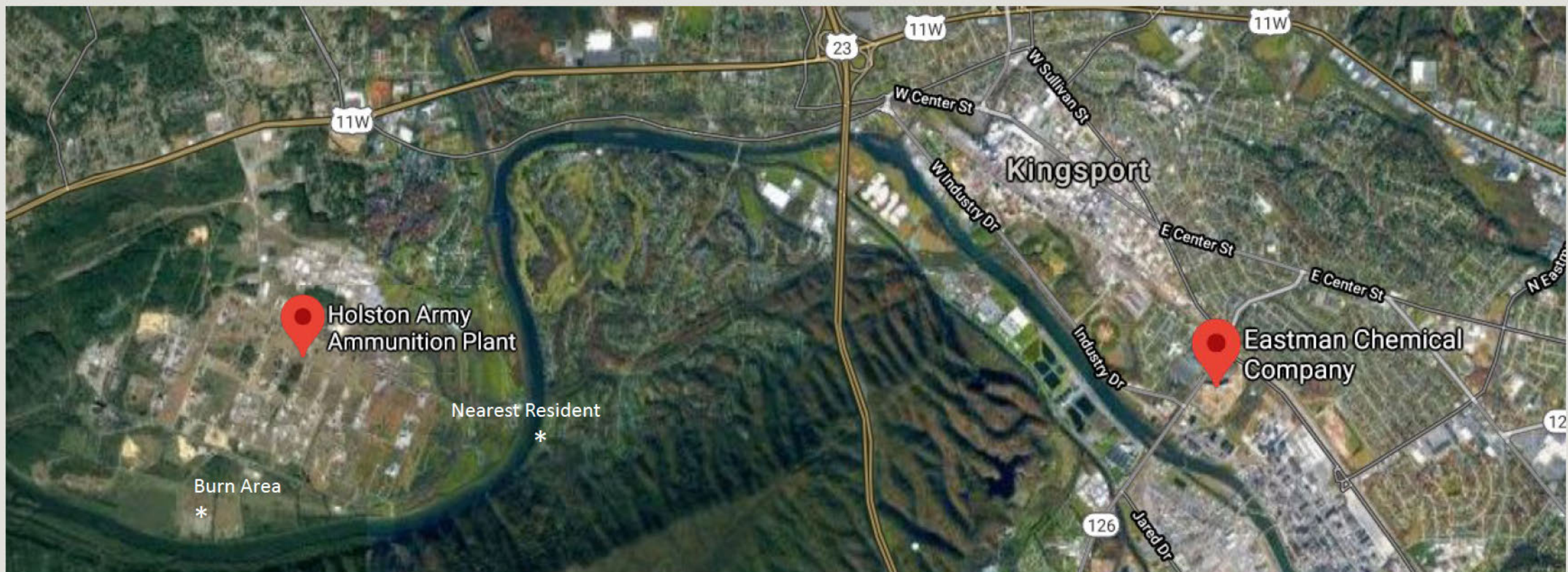
- In 2019, the EPA and the National Academies of Sciences, Engineering, and Medicine (NASEM) published separate reports describing many alternative technologies now available to treat explosive waste.
- ORCR has initiated rulemaking to update RCRA regulations to reflect this new information.



Holston Army Ammunition Plant (HAAP)

- HAAP is the major manufacturer/supplier of explosives (RDX, HMX, and IMX) for the military.
- Tennessee Department of Environmental Conservation (TDEC) is authorized for the RCRA and CAA Programs.







Burn Pans

(b)(5)

(b)(5)



Burn Cages

(b)(5)

(b)(5)



Burn Piles

(b)(5)

(b)(5)

Citizen Concerns

- For more than a decade, EPA and TDEC have received citizen complaints and inquiries regarding open burning at Holston.
- The emissions from the burns are a concern due to their frequency, duration (multiple days and nights), odors (e.g., odor of burning tires or burning plastic), proximity to populations and water bodies, nuisance (large dark plumes), and potential exposure to air contaminants, including particulate matter, dioxins, furans, asbestos, lead and PCBs, and other air toxics.
- Recent citizen group inquiries have raised additional concerns that materials that Holston is open burning also include PFAS.

Preliminary EJ Analysis

- The majority of the surrounding block groups have a significant percentage of low income and older populations (age 64+), that is above the state average of TN.
- The percentage of people of color (“POC”) is low across the screened area which is relative to the state except in one Census block in downtown Kingsport:
 - Census block group # 471630402001, population of 1,324, has 31% POC population (71st percentile for the state), is 79% low income (97th percentile in the state), and 23% of the population has less than a high school education (84th percentile in the state).
- One Census block group has a population of Chinese speaking individuals that are linguistically isolated, about 10% of the 868 residents, as well as a 66% low-income population (91st percentile in the state).
- Two elementary schools (Mt. Carmel Elementary and George Washington Elementary) are each about two miles from the location of the burn pit and across the road from the facility.

Actions Needed

- (b)(5)

- (b)(5)

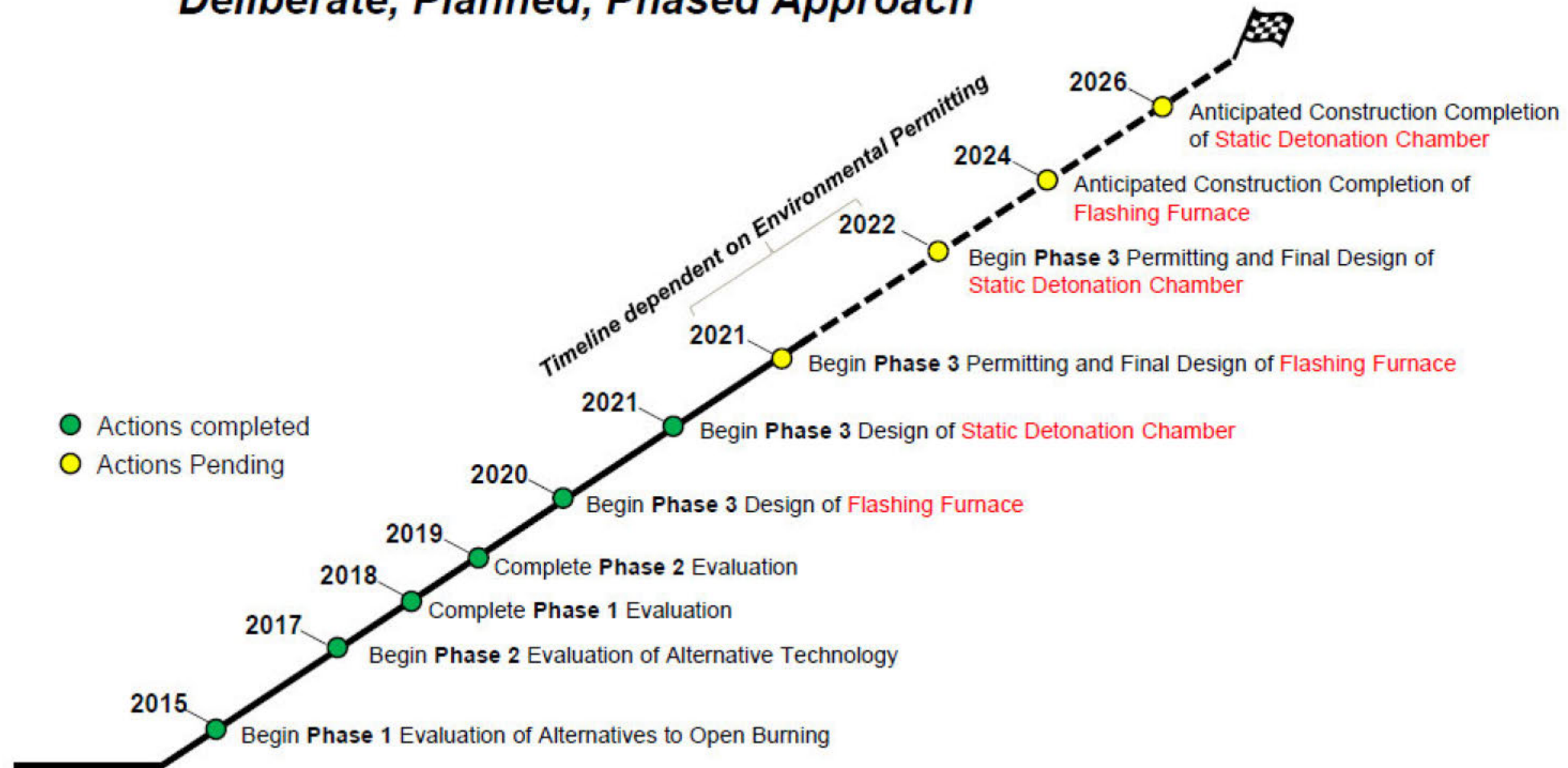
(b)(5)

- HAAP has identified two alternative technologies for treating waste in lieu of open burning:
 - **Flashing Furnace** – to treat solid and hazardous waste in lieu of burn cages, piles, and pans; anticipated 2024
 - **Static Detonation Chamber (SDC)** – to treat hazardous waste in lieu of burn pans; anticipated 2026
- From recent discussions with DoD, HAAP intends to submit RCRA permit application to TDEC for flashing furnace in December 2021 and SDC in January/February 2022.



OPEN BURNING ALTERNATIVE TECHNOLOGY DEVELOPMENT

Deliberate, Planned, Phased Approach



(b)(5)

- TDEC is currently in the process of renewing HAAP's RCRA permit for its open burn unit.

- (b)(5)

(b)(5)

(b)(5)

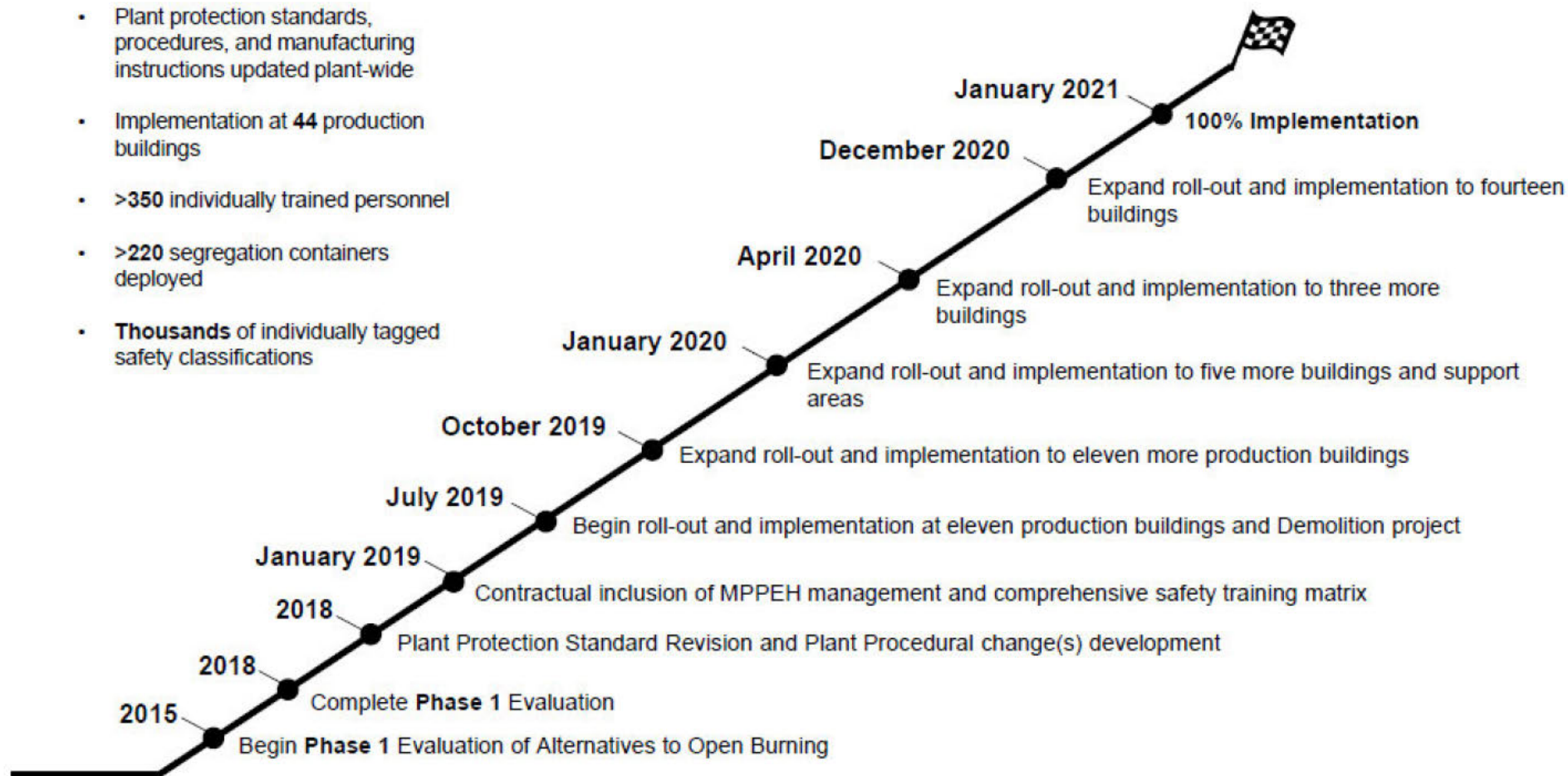
- HAAP primarily uses “generator knowledge” of the waste streams to determine that wastes burned in the burn cages and burn piles are “non-hazardous” wastes and are not reactive/explosive under RCRA.
- Yet, HAAP claims these wastes have a potential explosive safety hazard and cannot be safely disposed of through other modes of treatment and are thus eligible for a Tennessee Air Pollution Control exception to TN’s prohibition on open burning of waste.



INTERIM MEASURES DIVERSION

MPPEH Reduction Efforts

- Plant protection standards, procedures, and manufacturing instructions updated plant-wide
- Implementation at **44** production buildings
- **>350** individually trained personnel
- **>220** segregation containers deployed
- **Thousands** of individually tagged safety classifications

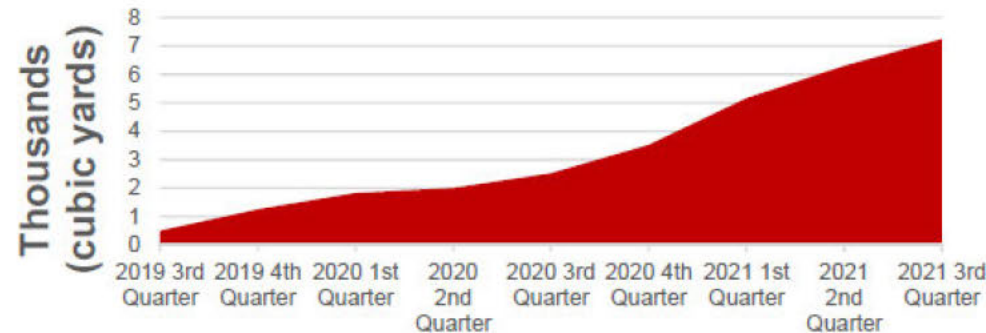




INTERIM MEASURE METRICS

Waste Reduction and Diversion

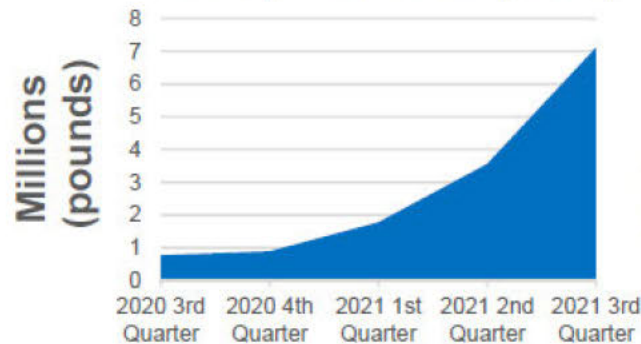
Production Waste Diverted



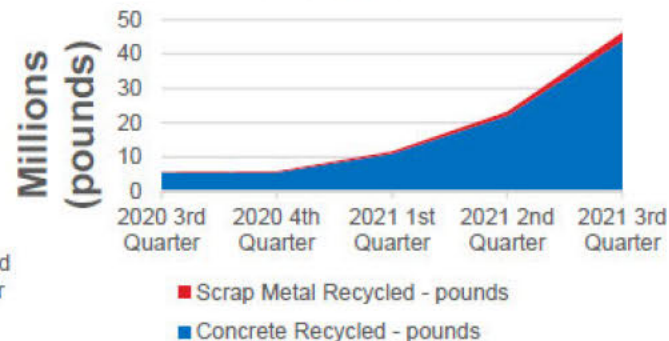
- **7000+ Cubic Yards** of Production Waste
- **7,000,000 lbs** of Building Debris Diverted
- **45,000,000 lbs** of Concrete and Metal Recycled

Demolition Waste Diverted and Recycled

Building Debris Diverted (Landfill)



Concrete & Scrap Metal Diverted and Recycled



(b)(5)

- (b)(5) DoD safety definitions:
 - MPPEH – Material Potentially Presenting an Explosive Hazard
 - MDEH – Material Documented as an Explosive Hazard
 - MDAS – Material Documented as Safe
- Holston maintains there are nine non-RCRA waste streams: some are MPPEH, some are MDEH, (b)(5)
(b)(5)
- (b)(5) a meeting on this topic is scheduled for December 14, 2021.

(b)(5)

- (b)(5)

- (b)(5)

- (b)(5)

(b)(5)

Army's Directive issued in 2019 requiring immediate termination of OB for non-explosive solid waste.

Next Steps regarding HAAP

- (b)(5)

- (b)(5)

- (b)(5)

Other ORCR Actions Regarding OB/OD

- Developing rulemaking to propose regulatory changes.
- Exploring cleanup and closure practices related to OB/OD.
- (b)(5) [REDACTED]
- (b)(5) [REDACTED]
- ORCR continues to coordinate with DoD, meeting quarterly to discuss OB/OD issues.
- ORCR hosts monthly calls with states and Regions on OB/OD issues.

Potential ORCR Action

- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]
- (b)(5) [Redacted]

Recommendations for Senior Leaders

- (b)(5) [REDACTED]
- (b)(5) [REDACTED]
- (b)(5) [REDACTED]